

Bellwork: 11/30/11

Use substitution
method: $(3, 2)$

$$\checkmark x + y = 5 \Rightarrow x = 5 - y$$

$$\checkmark x - 5y = -7$$

$$(5 - y) - 5y = -7$$

$$5 - y - 5y = -7$$

$$5 - 6y = -7$$

$$\frac{-5}{-6} \quad \frac{-7}{-6}$$

$$\boxed{y = 2}$$

$$x = 5 - 2$$
$$x = 3$$

consistent
independent

Use graphing
method:

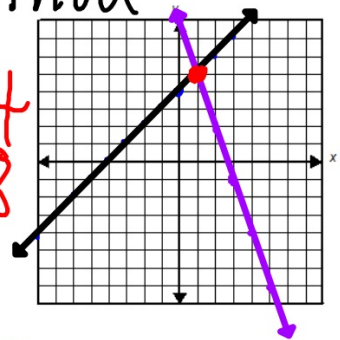
$$x - y = -4$$

$$3x + y = 8$$

$$y = x + 4$$

$$y = -3x + 8$$

$(1, 5)$ consistent
independent



You can ELIMINATE if and only if:

- 1) Variables and Equal sign MUST line up
- 2) Opposites

Example 1:

$$3(3) - 1 = 8$$
$$8 = 8$$

$$(3, 1)$$

$$1) \begin{cases} 3x - y = 8 \\ 2x + y = 7 \end{cases}$$

$$5x = 15$$

$$x = 3$$

Consistent
independent

$$2(3) + y = 7$$

$$6 + y = 7$$

$$y = 1$$

$$2) \begin{cases} x + y = 14 \\ x - y = 4 \end{cases}$$

$$2x = 18$$

$$x = 9$$

$$\checkmark (9, 5)$$

$$9 + y = 14$$

$$y = 5$$

$$3) \begin{cases} 3x + 2y = 7 \\ 5x - 2y = 1 \end{cases}$$

$$8x = 8$$

$$\boxed{x = 1}$$

$$3(1) + 2y = 7$$

$$3 + 2y = 7$$

$$2y = 4$$

$$\boxed{y = 2}$$

$$(1, 2)$$

$$1) \begin{cases} 4x + 5y = 6 \\ -1(4x - 2y = -8) \end{cases}$$

$$\begin{array}{r} 4x + 5y = 6 \\ + \quad -4x + 2y = 8 \\ \hline \end{array}$$

$$7y = 14$$

$$\boxed{y = 2}$$

$$\boxed{(-1, 2)}$$

$$4x + 5(2) = 6$$

$$4x + 10 = 6$$

$$4x = -4$$

$$\boxed{x = -1}$$

$$4(-1) - 2(2) = -8$$

$$-4 - 4 = -8$$

$$-8 = -8 \checkmark$$

$$2) \begin{cases} 3x + 2y = 2 \\ 3x + y = 7 \end{cases}$$

$$3) \begin{cases} x - 2y = 2 \\ 3x = 2y + 10 \end{cases}$$

4)
$$\begin{cases} 2x + y = 25 \\ 2x = 5y + 7 \end{cases}$$

1)
$$\begin{cases} 2x + 5y = 15 \\ -4x + 7y = -13 \end{cases}$$

$$2) \begin{cases} 6r + 7t = -15 \\ -3r + t = -6 \end{cases}$$

$$3) \begin{cases} 2x - 7y = 3 \\ 5x - 4y = -6 \end{cases}$$

$$4) \begin{cases} 2y - 4x = 18 \\ -5x + 3y = 23 \end{cases}$$

5)
$$\begin{cases} 2x + 5y = 12 \\ 2x + 5y = 15 \end{cases}$$

6)
$$\begin{cases} 8x + 4y = -16 \\ 2x + y = -4 \end{cases}$$

Practice:

$$1) \begin{cases} 5x + 3y = 2 \\ 2x + 20 = 4y \end{cases}$$

$$2) \begin{cases} 2x = 5 + 4y \\ 2y = 8 + x \end{cases}$$

$$3) \begin{cases} 4y + 30 = 10x \\ 5x - 2y = 15 \end{cases}$$